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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,432	08/27/2003	MacMillan Wisler	AES 003-004	5199

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EXAMINER
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WONG, ALBERT KANG

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/649,432

Applicant(s)

WISLER ET AL.

Examiner

Albert K. Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45-48 is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-11, 13-18, 20-24, 26-33, 35-40, 42-44, and 49-58 is/are rejected.
- 7) ☒ Claim(s) 3, 12, 19, 25, 34 and 41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. This Office action is in response to the application filed August 27, 2003. Claims 1-58 are pending.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 8-11, 14-18, 21-24, 30-33, 36-40, 43-44, 53, and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (6,218,959).

Regarding claims 1-2, the claimed transformer is taught as item 180 in Figure 5, and in detail in Figure 6. Col. 11, line 39-col. 12, line 13 teaches the details of the current receiver that measures a signal induced in the transformer and to demodulate the response signal to obtain the signal. Figure 1 shows the receiver located in a drill string. While a toroid is taught, applicant has stated in his specification that a toroid is a form of transformer.

Regarding claims 8-9, 14-15, 21-22, 30-31 the response signal is a current when it leaves the toroid and is converted to a voltage for processing by the electronic circuits.

Regarding claims 10-11, these claims are the equivalent of claims 1-2 with the inclusion of a transmitter. Smith teaches the transmitter as item 44 which creates a modulated signal in the drill string.

Regarding claims 16-17, these claims are the equivalent of claims 1-2 with the inclusion of a donwhole assembly. The assembly is taught in col. 3, line 62-col. 4, line 25.

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Regarding claim 18, the data is sent to the platform which constitutes surface equipment. Inherent in the surface equipment is means to determine a parameter of interest since that is the purpose of remote monitoring.

Regarding claims 23-24, these are the method equivalents of claims 1 and 2. Since the apparatus are anticipated, the methods of using the apparatus in its conventional manner are similarly taught.

Regarding claims 32-33, these claims are the method equivalent of claims 10-11. Since the apparatus is anticipated, the method of using the apparatus is also anticipated.

Regarding claims 36-37, these claims are the method equivalent of claims 14-15. Since the apparatus is anticipated, the method of using the apparatus is also anticipated.

Regarding claims 38-40 and 43-44, these claims are the method equivalent of claims 16-18 and 21-22. Since the apparatus is anticipated, the method of using the apparatus is also anticipated.

Regarding claim 53, this claim is the equivalent to claim 16 with the addition of the location of the toroid with respect to the rig. As shown in figure 1, the receiver is remote from the rig.

Regarding claim 58, this is the method equivalent of claim 53, and thus, is similarly anticipated.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6, 28, 42, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith '959.

Regarding claim 6, Figure 1 teaches a drill string on an underwater platform. It would have been obvious to place the toroid at any portion of the drill string, including a location where the drill string enters the borehole. The particular location would be dependent on the depth of the drill string and receiver in relationship to the borehole.

Regarding claim 28, this limitation has been addressed in claim 6.

Regarding claim 42, this claim is the method equivalent of claim 28. Since the apparatus is anticipated, the method of using the apparatus is also anticipated.

7. Claims 4, 13, 20, 26, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claims 1, 10, 16, 23, 32 above, and further in view of Smith (6,781,520).

Regarding claims 4, 13, 20, Smith '959 does not teach a rig voltage receiver to enhance signal to noise. Smith '520 teaches the use of a variety of sensors to improve the signal-to-noise ratio of a transmitted signal. Col. 4 teaches that the use of the system may be applied to a conventional communication system using toroids. Col. 4, lines 40-50 teaches the use of current

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sensors mounted on a rig. The current sensor functions as a receiver. As shown in Figure 3, the noise signal is fed into an ADC for processing. It would have been obvious to convert the current measurement into a voltage value for processing by the ADC. Further, it would have been obvious to combine the references since Smith '520 suggests the use of the noise reduction system in a toroidal communication system.

Regarding claim 26, this limitation has been addressed above.

Regarding claim 35, this claim is the method equivalent of claim 13. Since the apparatus is anticipated, the method of using the apparatus is also anticipated.

8. Claims 5, 7, 27, 29, 49-52 and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith '959 and further in view of Edwards (6,727,827).

Regarding claim 5, Smith does not disclose the location of a transformer in an annulus around the outside of a casing or the location of the receiver. Edwards discloses a toroid around a casing that is connected to a receiver. It would have been obvious to locate the toroid around the casing as suggested by Edwards because they are in the same field of endeavor, namely well bore telemetry. It would have been obvious to locate the receiver at the surface since most processing is done when human are located. Finally, a communication link is inherent since some means must connect the toroid sensor to the receiver.

Regarding claim 7, Edwards discloses a toriod around a casing. A casing typically encompasses a drill string in a completed well. It would have been obvious to locate the toroid around the casing as suggested by Edwards because they are in the same field of endeavor, namely well bore telemetry.

Regarding claims 27 and 29, these are the method equivalent of claims 5 and 7.

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Regarding claim 49, Smith teaches a toroid for measuring a modulated signal current in a drill string and a current receiver cooperating with the toroid to measure the signal within the toroid and to demodulate the signal. Smith does not teach locating the toroid around a casing. Edwards teaches using a casing with a toroid surrounding the casing to form a receiver. It would have been obvious to locate the toroid around the casing as suggested by Edwards because they are in the same field of endeavor, namely well bore telemetry.

Regarding claim 50, since the casing is conventionally placed in a well annulus of a borehole, it would have been obvious to one of ordinary skill in the art. The location of the receiver would be dependent on the particular situation. It would have been obvious to locate the receiver at the surface since most processing is done when human are located. Finally, a communication link is inherent since some means must connect the toriod sensor to the receiver.

Regarding claim 51, the location of the toroid would be dependent on the particular application. It would have been obvious to locate the toroid where the casing enters the borehole for easy accessibility.

Regarding claims 54-57, this is the method equivalent of claims 49-57 and are similarly obvious.

9. Claims 3, 12, 19, 25, 34 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 45-48 are allowed.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert K. Wong whose telephone number is 571-272-3057. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert K. Wong  
April 14, 2006



**ALBERT K. WONG**  
**PRIMARY EXAMINER**